EPA National & Region I Initiatives to Reduce Greenhouse Gas Emissions

Norman Willard, Climate Change Coordinator
U.S. Environmental Protection Agency Region I - New England*

U.S. CLIMATE CHANGE ACTION PLAN

Altogether there are nearly 50 programs and initiatives that comprise the U.S. Climate Action Plan to reduce greenhouse gas emissions. These are often referred to as the "CCAP" programs. Most are voluntary and non-regulatory. The U.S. EPA and the U.S. Department of Energy are responsible for implementing the lion's share of these programs, but other agencies have programs too. Federal agencies provide free technical assistance and support. This paper will focus on some of EPA's programs to reduce greenhouse gases.

EPA's climate action programs and initiatives are based simple propositions

Carbon dioxide represents the largest share of U.S. greenhouse gas (ghg) emissions. By far, most U.S. carbon dioxide emissions come from the combustion of fossil fuels: coal, oil and gas. Carbon dioxide is a by-product of fossil fuel combustion. To the extent that we can reduce the combustion of fossil fuels, we can reduce U.S. carbon dioxide emissions.

KEY GREENHOUSE GAS SECTORS: TRANSPORTATION AND ENERGY PRODUCTION AND USE

Fossil fuels are combusted to move people and goods around–"trains, planes, automobiles". And boats. And trucks. And SUV's. The transportation sector in this country is based on the internal combustion engine burning fossil fuels. As a source of greenhouse gas emissions, the transportation sector is a critical one because it accounts for about 30 percent of total U.S. ghg emissions. The energy sector—that of energy production and energy use—is the other critical sector.

The U.S. economy is highly dependent on electricity to meet our enormous (and growing) energy needs. Today, most of our electricity comes from generating plants that burn fossil fuels: coal, oil and natural gas. Coal and oil release more CO_2 per unit of energy (Btu) than natural gas.

Electricity production and use constitutes the principal source of U.S. greenhouse gas emissions. By generating less electricity and by using cleaner fuels, we will reduce ghg emissions. By using more efficient generating technologies, we will reduce ghg emissions. By generating less electricity—by reducing demand for electricity—we will reduce ghg emissions. By being more energy efficiency and using more end-use energy efficient technologies, we will reduce our ghg emissions.

The majority of EPA's Climate Action Plan programs—"CCAP" programs—focus on energy efficient technologies. These technologies are "off the shelf" and available now. They are not science fiction technologies or years out from development.

EPA's EnergyStar and Green Lights programs—U.S. CCAP flagship programs—promote energy efficient technologies. They are based on profitability and on free technical support from EPA.

Participants are asked to undertake, for example, a lighting upgrade, where it is profitable, using energy efficient lighting technologies. In the case of Green Lights, a participant—a Partner—is asked to upgrade facility lighting where there will be an internal rate of return greater than 20 percent (before any rebates—to the extent that rebates still exist). This is a great return on investment, when you compare it to the stock market historically. Except for the 80's and, it seems, the last year or so, the stock market over its history has shown about a 10-12 percent annual investment return.

In the Green Lights program, which has been going for about 6 years, Partners on average have seen a 47 percent reduction annually in their electricity use and in their bills for lighting using available technology. Because the technology is efficient, it means less electricity in needed to perform the same lighting work. This means less electricity has to be generated. And this means, in turn, less carbon dioxide—the greenhouse gas—is emitted from the generating plant.

Equate efficiency with less waste, and with saving money. Through efficiency, the less you waste CO_2, kilowatt hours and dollars, the more you have: clean air and more money for reinvestment. Some

* See Appendix V for authors' affiliations and addresses.

have said that energy efficiency is a "win-win" proposition. They have likened it to picking up twenty dollar bills on the street. There are "no regrets." It makes sense to do it in any case. The investment in energy efficiency and clean air—reduced CO_2 (and SO_2, NO_x, particulates, heavy metals) emissions—is profitable!

TRANSFORMING THE MARKET

Another benefit of EPA CCAP programs is market transformation. As more companies, colleges and universities, hospitals and schools, municipalities and states and federal agencies participating in the programs upgrade their facilities with energy efficient technologies, the price of the equipment comes down, the quality improves and more efficient technologies are produced because of the increased demand.

The national EPA CCAP market transformation programs—"pushes" and "pulls"— promote technology advancements that strengthen the economy and create jobs, while saving everyone money—and helping the environment.

SAVING MONEY, REDUCING ENERGY USE *AND* PREVENTING POLLUTION— GREEN LIGHTS

Today, there are on the order of 2,600 participants in the EPA's Green Lights program, representing more than 6 billion square feet of space—about 1/10 of all the office space in the country. Green Lights Partners are saving more than 4.6 billion kilowatts per year of electricity from their completed upgrades. This equates to $340 million a year, money that would otherwise be simply wasted, into the air—on inefficient, outdated technology. All the while these Green Lights Partners, are helping to reduce greenhouse gas emissions–some 6.4 billion lbs. of CO_2 a year. This is the equivalent to taking 644,000 cars off the road. Or planting 880,000 thousand trees.

Twenty four states have joined the Green Lights program and are upgrading all state-owned buildings and facilities. In this region, Maine and Massachusetts have joined Green Lights. We encourage all states in our region and elsewhere to join the Green Lights and EnergyStar programs.

EPA'S ENERGYSTAR PROGRAMS

EPA's EnergyStar Buildings program builds on the lighting program. It, too, is based on profitability. It, too, is voluntary. U.S. businesses spend $100 billion on energy each year to operate commercial and industrial buildings. By using energy efficient products and operational procedures recommended in this program, organizations could reduce their energy use by 35 percent or $ 35 billion nationally.

Participants begin by installing energy efficient lighting, because lighting affects a building's heating and cooling needs. A comprehensive, staged, energy efficiency upgrade is done of the entire building and its energy load. Where it is profitable–a greater than 20 percent internal rate of return–participants are asked to upgrade one-half of their building square footage over a 7 year period.

EPA has also designed an EnergyStar Homes program. New EnergyStar homes save owners a lot on their electricity consumption. At the same time they help reduce ghg's by lowering energy demand; they have a small energy footprint. We are working with the lending community and looking to save people on mortgage rates since efficient technologies represent such a good investment. We are working with the home renovation trade groups, too, to promote the installation of EnergyStar technologies when homes are renovated. Energy used in homes accounts for over 20 percent of all air pollution emissions in the country.

We are working to make the EnergyStar label–now commonly found on computers and other office equipment—familiar to everyone as a "sure sign" of efficacy and energy efficiency. We have entered into agreements with hundreds of equipment manufactures producing thousands of products–office equipment—computers, printers, copiers, fax machines, scanners—and other products—heating and cooling equipment, exit signs, heat pumps, geo-thermal systems, building insulation, windows, and many other products—to bring to market more energy efficient products. In return for meeting EPA voluntary efficiency performance standards, manufacturers of products may display the EnergyStar logo. This helps manufacturers and retailers to differentiate their products. The label and logo will help consumers make the energy-correct decision by showing them which products are the most energy efficient, and, therefore, which represent a good energy investment for the dollar. And which represent an investment in the planet by reducing greenhouse gas emissions.

We have developed an EnergyStar Small Business program that provides free assistance to the owners of facilities having less than 100,000 square feet of space. Since more than 99 percent of the approximately 22 million non-farm businesses in this country are small businesses according to the Small Business Administration, there is enormous potential for energy savings and cost savings for business owners–and for ghg reductions. Small businesses participating in this program can expect to cut energy costs by 35 percent. EPA is working with the lending community to develop loan programs that support small business energy efficiency.

We are working states and local governments (and encouraging companies, schools and other large purchasers) to encourage bulk purchases of EnergyStar equipment by means of the EnergyStar State and Local Government Procurement Challenge program. The power of the "procurement purse" will bring prices down, send efficiency up, lower electricity bills, and reduce emissions—when EnergyStar products are specified.

AN EPA CLIMATE CHANGE ACTION PLAN FOR NEW ENGLAND

At a June 26th conference on "Global Warming: What Does It Mean for New England?", EPA Regional Administrator John DeVillars announced an aggressive plan to reduce greenhouse gas emissions in New England and to increase public understanding of the issue—a climate action plan (CCAP) for New England.

1. Expand Participation in EPA's Voluntary Programs for GHG Reductions

EPA Region I will add 50 million square feet of new participant facilities in the EnergyStar/Green Lights programs by the end of 1998, reducing CO_2 emission in New England by an additional 73 million pounds per year. As of July, 1997, more than 200 participants in the region were reducing regional CO_2 emission by 417 million pounds a year. We would especially welcome the participation of states and municipalities in these programs to save taxpayers money and to show leadership in energy efficiency and true commitment to reducing their contributions of greenhouse gases.

In the same time period, EPA will increase by 50 percent—to almost 200—the number of New England business participant in EPA's flagship solid waste source reduction and recycling program, WasteWi$e. This program reduces placement of solid waste into landfills, thereby reducing the formation of the harmful greenhouse gas, methane produced by landfills.

In addition, our expanded source reduction and recycling programs with the Northeast Recycling Council to expand office paper recycling, and a new food waste composting program with the Center for Ecological Technology will eliminate an additional 10,000 metric tons carbon equivalent (MTCE) by the end of 1999.

2. Education and Information to Effect Change

We will make available to every student, teacher, and parent in New England clear, concise and easy-to-understand educational materials on global warming. These materials will be easily accessible on the Internet and in every public library in New England by December, 1997.

The environmental agency in each New England state will be furnished with clear, concise information on global warming—educational videos, print materials, and slide shows—to facilitate outreach to stakeholders and the public.

The EPA Region I - New England website will contain more information about EPA's climate change activities. It will include a bibliography of New England-related climate change materials comprising a Region I—New England clearinghouse on climate change, a list of climate change-related Internet links, information on what individuals can do about climate change, state-specific climate change impacts fact sheets, and other resources. Go to **www.epa.gov/region01**.

3. A Federal Response: Getting Our House in Order

In the summer of 1997, the U.S. General Services Administration issued a request for proposals (rfp) to purchase power in bulk for New England's federal facilities. At EPA's urging, the rfp includes a "clean power" choice–4 percent of the electricity supplied will be from renewable, climate-friendly resources, thereby creating significant new demand for "green power" in New England. This rfp will leverage the government's buying power to bring state-of-the-art renewable energy resources and efficiency strategies to our buildings.

We encourage states, municipalities, companies large and small, institutions, cooperatives and other large buying entities to make the "climate-friendly" power choice, too, when open retail energy/electricity choice becomes available across

the region as electric industry restructuring unfolds in New England. Residential customers, too, should consider "clean power."

4. Federal Vehicle Fleets Helping the Climate

By 1999, 50 percent of new fleet vehicles purchases will have the capacity to run on alternative fuels. EPA will assist and encourage all federal agencies in the region to purchase and use clean fuel vehicles.

5. Transportation

Through its Clean Air Partners program, EPA is helping to make Logan International Airport in Boston a world model for the use of clean fuel vehicles—for both passenger transportation and for airplane service vehicles.

Building on the success at Logan over the next year, we will expand the use of clean fuel vehicles in Portland, Maine, including:

- Developing legislative incentives to facilitate increased use of clean alternative fuels, including electric, natural gas and propane vehicles
- Introducing up to 10 propane-powered vehicles to private companies with fleets in greater Portland

And at the Foxwoods Casino and Resort in Ledyard, Connecticut we will:

- Establish a refueling infrastructure for compressed natural gas (CNG)
- Introduce four CNG passenger shuttle buses

6. Promoting Collaboration Among the New England States

EPA has launched a New England Global Warming Network (a collaboration of EPA, DOE, and state environmental, energy, public utility, planning and transportation agency officials). By June, 1998, we plan that each of the six New England states will have created a comprehensive greenhouse gas emissions inventory. Further, by the end of 1998, the Network will identify a comprehensive set of strategies to stabilize greenhouse gas emissions.

By September, 1998, each New England state will have measures in place to ensure that methane from all large landfills is either flared or recovered for energy production, thereby reducing atmospheric releases of this potent greenhouse gas.

CONCLUSION

As citizens of a shrinking and interdependent world, as Americans, and as New Englanders, must find ways to reduce our greenhouse gas emissions. To succeed, we must pursue our reduction goals vigorously and in the most cost-effective ways we can devise. It will take a strong collective will and major commitment at all levels—in all sectors. We will all be participants in the coming years and decades.